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ABSTRACT

This paper describes a study of the relationship between terminology in psychological studies and prevailing social conditions at the time of the studies. It is proposed that researchers reflect societal concerns by their choice of semantic markers (terminology). Over 3,000 psychological studies from 1900-72 were analyzed in terms of their positive or negative orientation. Lists of all nouns and adjectives describing behavior within the studies were compiled. Studies were also categorized for their methodological orientation and whether they used animals, children, or adults as subjects. Results showed that (1) prior to 1920 the numbers of positively and negatively marked studies were equal, (2) since 1920 more negative than positive behavior studies have been conducted, (3) since 1970 positive behavior studies have increased, and (4) recently there has been an increase in experimental and psychotherapy studies using adult human subjects. These trends are discussed in terms of events such as the Depression, the Korean War, World War II, the Kitty Genovese murder, and growing drug and alcohol abuse. (MR)

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Positive and Negative Semantic Markers in Psychological Research; Does it Matter if Society Makes Love or War ?

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Footnote 1

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Positive and Negative Semantic Markers in Psychological Research;

Does it Matter if Society Makes Love or War?

Recently psychologists have been treated to the rediscovery, under a variety of titles, of the German Wissenssociologie tradition -- inaccurately translatable as " the sociology of knowledge." The principle thesis of the Wissenssociologie approach is that there are modes of thought which cannot be adequately understood apart from their social origins. Special branches of this approach have since evolved, for example, " the sociology of science" (Barber & Hirsch, 1962; Merton, 1973), and, within this, " the sociology of psychology" (Coan, 1973; Buss, 1975; Moscovici, 1972; Smith, 1973; Riegel, 1972). But the principle thesis remains essentially unchanged; that there is a mutual dependence between certain kinds of knowledge and certain forms of socioeconomic structures. One does not seek the ultimate causes of ideas in the minds of men, but rather in the social and physical environments of which these men were a part. Of the many notable contributors to this tradition, for our purposes probably Marx, Engels, and Mannheim are most important.

Marx and Engels made the clearest statement of this position. They started with the principle that economic production and exchange are the foundation of every social order, and that upon this process is based an inevitable superstructure of laws, religion, philosophy, and science. Engels (1878), for example, wrote that the ultimate causes of all social change are to be sought not in the minds of men, but in changes of production and exchange. And Marx (1852) observed that although men make their own history, they do so under circumstances as they find them transmitted from the past. The intellectual superstructure mirrors ineluctably the socioeconomic foundations upon which it rests. Although changes in one level are reflected in the other, according to Marx and Engels, the socioeconomic institutions are the basic ones.

While Marx and Engels emphasized the socioeconomic bases of thought, Mannheim (1936) tried to analyze the social forces antecedent to changes therein. This idea, that changes in legitimated patterns of knowledge can occur only under certain specific social conditions, is one of the fundamental contributions of the Wissenssociologie approach. Mannheim argued that during periods of social stability, traditional views of the world are maintained, but that periods of intense social change, especially vertical mobility, allow alternative world views to be considered seriously. One of the results of social change, therefore, is that ideas that previously were inconceivable, or considered mere curiosities, are investigated fully. How and why does this happen? Because something like what we would refer to as dissonance is engendered by the contrariety of the two different world views, or by the realization that the old view of the world is no longer adequate. It is possible, but difficult, to suppress the inadequacy of the old world view after a certain stage, and so the crucial question surfaces; namely, how can comparable thought processes about the same object produce different viewpoints? And the answer is, of course, that the two thought processes are not comparable. The implication for scientific thought is clear. Scientists turn from their observations of the world only when they are concerned about the nature of their observations. One felicitous occassion for the emergence of this concern is when the established modes of thought are being tried and found wanting. This leads to an awareness of the differences and thus to the acknowledgement and exploration of alternatives.

All of this is not new to psychologists. They have heard most of it before by another name. Boring (1954, 1955) wrote two important papers on the Zeitgeist, a term in which he felt psychologists ought to have a proprietary interest as the custodians of all Geister! Characteristically, Boring speculated that the term Zeitgeist, itself, was probably first used by Goethe. Boring, himself, defined the Zeitgeist as all the knowledge that affects a thinker's thinking.

A similar notion was involved in the Group Mind controversy, but Boring was especially concerned with the role of the Zeitgeist in the scientific process, and he showed how it could both advance and retard science. Boring avoided a purely materialistic interpretation of the scientific process. He argued for a complementarity between the Zeitgeist and a variety of more psychological explanations, including the "scientist as a discovery machine," egoism, loyality, and conformity. It should be pointed out, however, that Mannheim was not oblivious of individualistic factors, and in his discussion of the changing role of the intelligentsia he indicated how, during periods of rapid mobility, the intellectuals were forced to compete for public acceptance. The open competition for ideas emboldened them to consider ideas otherwise inconceivable. In the end, therefore, both the Wissenssociologie approach and Boring's Zeitgeist papers were concerned with a cognate problem; namely, social influences upon thought. Neither term, however, engaged the psychological imagination, although when psychologists referred to the problem at all, they seemed to prefer the term Zeitgeist.

The present investigation offers some data interpretable within this approach. Briefly, all abstracts in the Psychological Indexes and Abstracts for the decades 1900-1972 were perused for certain key words which had been selected as denoting "positively" or "negatively" oriented forms of social behavior. These semantic markers, by which investigators designated their research, were compared across decades, and increases and decreases in this positive-negative dependent variable were related to certain general socioeconomic conditions. The hypothesis is that there will be more work in negatively oriented behaviors (like aggression anxiety, fighting, etc.) during roughly the period 1940-1960, when the United States was involved with World War II; while for the period roughly 1970-1972, characterized by a general skepticism of everything traditional, antiwar sentiments, Eastern philosophies, and humanism, there will be more research on positively oriented behavior (topics like sympathy, cooperation, and love).

No evaluations are implied in the terms "positive" and "negative." Research on sympathy is no better than research on aggression. Positive and negative are merely labels used to categorize two different research orientations. Moreover, no assumptions were made about the motivations of the researchers, conscious or unconscious (see Carlson, 1971). But, as in most content analyses, there is the assumption that frequency of occurence is a valid indicator of something like the values, interests, or attention of the researcher, and the scientific community. It is important to point out, finally, that the focus of the investigation is not the behavior of the subjects in the experiment, but the researchers' choices of designations for their dependent variables and titles.

Method

Categories

In the present study, three different categorical dimensions were used. (a) The main dependent variable was the classification of the abstracts, articles, or books as "positive" or "negative" forms of behavior. For reasons indicated below, however, we were also interested in (b) whether the experimental subjects were animals, children, or adults, and (c) in the methodology used in the study.[2]

Positive-Negative. The distinction between "positive" and "negative" as these terms apply to forms of behavior is obviously a complicated one. Dictionary definitions were of no help, and books on psychological theory have scrupulously avoided this troublesome distinction. The usual linguistic criteria (Boucher & Osgood, 1969; Greenberg, 1966; Osgood & Richards, 1973) were tried, but they were also not very helpful. For example, although a few negative trait words are marked in the usual linguistic sense, most are not, nor is it clear that the negatives represent the entire dimension (Greenberg, 1966). This leaves only Osgood's

(Osgood & Richards, 1973) intuitive criterion, the feeling that somehow honesty is positive with regard to cheating, that sympathy is positive with respect to aggression, that altruism is positive with respect to egoism, etc. But since in order to proceed it was necessary to have at least working definitions of "negative" and "positive" behaviors, an attempt was made to derive these based on usage, especially in psychology. The definitions below are rough heuristic devices which try to indicate the general ideas which make prosocial and antisocial behaviors what they are. Probably positive-negative, as well as such behavioral categories as loving-hating, helping-hurting, are opposite sides of the same coin. Thus the "positive" and "negative" categories provide a set of anchor points for the principle dependent variable.

To be classified as a "positive" form of behavior, the behavior in question must, if generalized to most social situations, be expected to produce or maintain the well-being and the integrity of the other person(s) involved. This kind of behavior intends the well-being of the other person, and a willingness to share, however briefly, not only the other's goals, but even his pain, frustration, and sorrow. By contrast, the kind of behavior to be classified as a "negative" form of social behavior, if pursued, would be expected to circumscribe or destroy the freedom, expression, integrity, and well-being of the other person(s). Negative kinds of behaviors are self-oriented, being concerned neither with the pleasure nor the welfare of the other person(s). These tentative definitions of positive and negative behavior involve a kind of probability statement. They say, in effect, that, other things being equal, if a person acted as the positive (or negative) definition specified, the probability would be raised (or lowered) that the needs, goals, self-esteem, welfare, etc. of the other person(s) in the interaction would be realized.

Key Words. In order to obtain a relatively inclusive, unbiased list of semantic markers, or key words, by which studies could be classified as "positive" or "negative," a list of all

nouns and adjectives used to describe behaviour was culled from a sample of psychological journals published between 1900-1970. To engender some homogeneity upon the date to be analyzed, words describing moods and emotions, as well as words for institutionalized behavior patterns, such as "war," "delinquency," "democracy," etc. were eliminated. This restriction produced a list of 120 words, which was further reduced to 49 words by eliminating all the words which were not used at least once in a preliminary analysis of the nine Abstracts included in the sample. Finally, in order to obtain a list of terms judged to be "positive" and "negative," and as far apart semantically as possible, the 49 words, plus 16 buffer words from the original list, were given to 31 faculty and advanced graduate students in psychology to be evaluated on 9-point Positive-Negative Semantic Differential type scales. A brief definition of the "positive" and "negative" anchor points was included with the scales and discussed with the raters before they made their judgements. The means and standard deviations of the ratings for the words were then obtained, and the 18 most positive words (highest means) and the 18 most negative words (lowest means) comprised the final list of key words. The average mean scale value of the positive words was 7.5 (SD = 1.3), and, of the negative words, 2.6 (SD = 1.5). The difference between these means was highly significant ($p < .01$). These 36 key words, their scale values, and the percent of time they were used in the final analysis are given in Table 1.[3]

Insert Table 1 about here

The final list of key words are like personality trait names, which, according to Osgood and Richard (1973) can be characterized by their positivity and their negativity. They are less descriptions of behavior-in-context than cognitive constructs characterized by bipolar (positive-negative) organization. A closer examination of a small subsample of our material

showed, that the words proved adequately discriminating. For this analysis one reader perused the articles in their original journals and characterized them as positive or negative, while another independently used the key words to classify them from the Abstracts. The agreement between the two coders was 80% - 90%.

Kinds of subjects. If, in fact, the orientation in psychology has shifted, it might also involve a change in the kinds of subjects used in research. One might expect that more animals would be used in negatively-oriented research, while more positively-oriented studies would involve human subjects. To test this hypothesis, the studies were also classified according to whether the subjects were human adults, children, or animals.

Type of article. An obvious confound in the positive-negative emphasis would be the methodological orientation of the study. In order to analyze and control for this possibility the abstracts, articles, or books were further categorized according to their methodology. Four categories were used; "experimental," "descriptive," "theoretical," "psychotherapy." In a study categorized as "experimental," there was manipulation and control of the independent conditions and measurement of their effects upon the dependent variable. In a "descriptive or controlled observation" study, the independent conditions were systematically observed, but not controlled, and the effects were measured by the dependent variable or described in detail.[4] In a work categorized as "theoretical," the emphasis was upon the derivation of hypotheses and the elaboration of theory; data, although utilized, were not collected. The last category, "psychotherapy," was, strictly speaking, a content rather than a methods category, but the number and importance of articles and books oriented toward psychotherapy seemed to justify its inclusion. In the "psychotherapy" studies the emphasis was upon the modification of behavior from what was described as "maladaptive," "antisocial," or "psychotic," to "normal," "adaptive," or "socially acceptable," and such studies involved data collection, theory, or both.

Coding

One coder analyzed all the English abstracts, articles and books, and another coded all the German and French materials. The author coded a 10% sample of both for every decade to obtain indications of interjudge reliabilities, which were above 90% agreement for all categories. Books were coded the same as articles, with the fact noted.

Sample

The sample consisted of all abstracts in the Psychological Indexes for 1900, 1910, 1920, and the Psychological Abstracts for 1930-1970 and 1972 whose titles and contents contained at least one of the key words relating to "positive" or "negative" forms of social behavior. Whenever the abstract was unclear, the article or book, itself, was read.

Results

For the periods 1900-1972, a total of 3,353 abstracts, articles, and books were analyzed, of which 785 (23%) contained "positive" sematic markers and 2,568 (77%) contained "negative" markers.[5] From 1900-1920 there was clearly no difference in the number of positive and negative studies and together they account for less than 1% of the total tallies. From about 1920 onward, however, and continuing thereafter until 1972, Figure 1 shows that the sheer number of studies with titles marking "negative" forms of social behavior greatly exceeded the number of studies indicating "positive" social behavior.

Insert Figure 1 about here

The relative frequency of positive and negative studies by decade is given in Table 2, from which it can be seen that, as predicted, 1960 marked the nadir of the proportion of positively oriented studies. But the hypothesis pertains to comparisons of trends in positive and negative studies for particular eras. The most direct test of this hypothesis is provided

by collapsing the proportion of positive studies for 1970 and 1972, which was .246, and the proportion of positive studies for 1950 and 1960, which was .166. The difference between the magnitude of these proportions was highly significant ($p < .01$).[6] One could also have tested for the difference between the magnitude of the proportions for the 1930-1940-1950-1960 decades combined, which was .183, and the 1970-1972 period. This difference was also highly significant ($p < .01$).

Although not part of the hypothesis, and unanticipated, the proportion of positive studies during the decades 1930 and 1940, which was .260, was significantly different ($p < .01$) from the positive studies during the combined 1950-1960 decades, but not significantly different from the 1970-1972 period.

Insert Table 2 about here

We would next like to know whether positive (or negative) studies used different kinds of subjects. Table 3 gives the number of positive and negative studies by subjects from 1900-1972, and the reader can regroup the data to see that the answer is affirmative. The data can also be combined to relate more directly to the hypothesis. Of the positive studies, during the 1930-1960 decades, 17% used human adults subjects, and this increased to 28% during the 1970-1972 period ($p < .01$). By contrast, the use of animals for research in positively marked studies declined from 18% to 3% for these same periods ($p < .01$). The proportion of children used in studies of positive behavior before or after 1960 did not differ significantly. We also found, incidentally, as did Bruner and Allport (1940) that the human adult was the preferred subject over all decades when both positive and negative studies were combined.

Insert Table 3 about here

Table 4 gives the methodological orientation of the positive and negative studies by decades. Once again the interesting question is whether positive (or negative) studies were prone to one or another kind of methodology, to theory, or to psychotherapy? The answer is that recent experimental and therapy studies were more often positively oriented; while for those studies using a descriptive methodology and for those pertaining to theory there were no significant differences between the 1930-1960 period and the 1970-1972 period. Specifically, 23% of the 1930-1960 experimental studies as compared with 29% of the later ones were positively oriented ($p < .02$). Secondly, there was an increase in the proportion of psychotherapy studies classified as positively oriented from 5% for the earlier decades to 10% for the later period ($p < .04$).

Insert Table 4 about here

Discussion

The most important findings to emerge from this study were; (a) the interest in positive forms of social behavior prior to about 1920, (b) the preponderance of studies of negatively marked forms of social behavior since about 1920, (c) the 1970-1972 increase in the proportion of studies of positive behavior, and (d) the increase in the latter of experimental and psychotherapy studies using human adult subjects. Our purpose now is to show how these trends relate to the socioeconomic milieu out of which they arose.

It is worth noting, in the first place, that the interest in positive behavior before about 1920 or 1930 was unexpected. It is always difficult to retrace the course of psychology to an earlier period, partly because much of what an earlier epoch knew, or thought they knew,

we have never learned. But a closer look at that period reveals some singularly important contributions to what we have called positive forms of behavior. To mention only a few, there was Boeck's (1909) survey of sympathy in children, Max Scheler's (1923) very important Wesen und Formen der Sympathie, Goodwin Watson's (1928) work on individual and group problem solving, Hartshorne, May, and Shuttleworth's (1928, 1929, 1930) The Character Educational Inquiry, Margaret Mead's (1937) summary of cooperation and competition, and Lois Murphy's (1937) pioneering study of Social Behavior and Child Personality. Experimental methods were being established in social, personality, and child psychology, and the first appearance of Murphy and Murphy's (1931) Experimental Social Psychology was to signal this fact, as well as to point out that already "much had been done in this direction" (xi, 1937).

Certain broad socioeconomic events during the late 1920's and 1930's are readily discernable, and since we assume that science is an institution rooted in society, we can consider what might have been some of the forces influencing psychological work during this period. The most important force was probably the economic depression, which accentuated the need to reexamine social and economic behavior, and emphasized the urgency for collective action in political reform. Other forces affecting psychology may have been more particularistic. For example, during this period there was a concern in many of the Protestant churches with the "social gospel," and there was a movement away from the seminary of many young men who eventually became outstanding psychologists. One can think, for example of Theodore Lentz, Robert Lynd, Theodore Newcomb, Ernest Osborne, Carl Rogers, Goodwin Watson, all of whom were at the Union Theological Seminary before they moved to other parts of Columbia University. Lois Murphy probably belongs in this group, too. And although Floyd Allport and Gordon Allport did not begin theological study, their early religious concerns were deep and pervasive.[7]

Although each new era makes the past more impenetrable, it seems reasonable to assume that the Great Depression, which many interpretted as the end of rugged individualism, would, for this reason, exert some strong influences in the direction of studies of cooperation, sympathy, and social solidarity. The depression also signaled for many the breakdown, or at least the need to inspect more closely, the capitalistic ideology, and this, as Mannheim noted, opened the way for alternative ideas and approaches. These were exciting times for what were then called the "social sciences". Politicians turned to the universities for answers to questions for which there were no data. And in psychology the experimental method was extended to new areas, and prosocial topics received more attention.

This brings us to the 1940-1960 period. Table 2 indicates that 1950-1960 marked a significant increase in the proportion of negative, and a corresponding decrease in the proportion of positive studies. There were also some interesting qualitative difference in the data for this period. For example, until about 1940 all of the key words were about equally used. After that time, however, two words, "anxiety" and "aggression", accounted for more than half of the negative tallies, with nothing comparable among the positive words. It is interesting to speculate that "anxiety" and "aggression" were concepts which interested not only psychologists, but also reflected the temper of the times, for this was the period of fascism in Italy, communism in Russia, nazism in Germany, the Japanese invasion of Manchuria -- and somewhat later of McCarthyism and the HUAC at home.

It was into this world that Hull's work was born. Hull attracted to Yale during those years a band of dedicated and enthusiastic younger devotees. Their response to the gravity of the situation was to render many important problems into researchable form, and to interpret the results in terms of the new behaviorism. This program was no mere intellectual exercise; it was a search for concepts and methods upon which survival depended. The seriousness of

the situation may have been one of the reasons that Hull wrote in the final section of his Principles, "The primary task of a science is the early and economical discovery of its basic laws" (1943, p. 398).

To this task Hull brought two particular advantages. Although almost all psychologists served the war effort, each did so in his own way. Lewin, for example, dedicated himself completely to the war effort, his students were as enthusiastic and productive as Hull's, and his subsequent influence was at least as great. But Lewin's Language was theoretical and abstract. The personality psychologists and the clinicians, most of whom, with the exception of Allport, were Freudian, used a vocabulary replete with terms for what sociologists call deviance. Only Hull's terms engaged systematically the range of normal behavior. Hull, and his students, used terms like "drive," "response," "habit" that most people understood, or thought they understood. Moreover, not only did Hull's system appeal to a wider audience, but Hull, himself, became the exponent of a theory along the lines of the natural sciences when many behavior scientists were concerned with a "scientific" explanation for behavior. And Hull's students exported that theory with Missionary Zeal to the rest of the behavioral sciences. Yale Imperialism extended at least to sociology, anthropology, political science, and clinical psychology. It would be difficult to find an acceptable objective measure of Hull's influence even in Psychology, but Logan (1969) reported a 70% citation rate for Hull's work in the 1953-54 journals of Experimental Psychology and Comparative and Physiological Psychology. Logan presented no comparative data, and in selected journals other psychologists -- Allport, Lewin, Murphy, Murray, Tolman, for example, -- would probably have had high citation rates, but there can be no doubt about Hull's enormous influence.

The point is that Hull's influence may be taken as a reflection of the prominence of learning theory in American psychology at that time. (c.f. Finison, 1976.) And this is important for our purposes, because the roots of learning theory can be seen clearly in the philosophy of hedonism, as in Thorndike's Law of Effect and in Freud's emphasis upon motivation. Now hedonism presents an essentially negative view of man, especially in the legacy of Benitham (1789), Hobbes (1651), and Machiavelli (1513) (Allport, 1968). Human nature according to Hobbes (1651), for example, was maleficent, unreasoning, and selfish, and the problem for society was to control man's antisocial impulses. One finds this view later in Freud (1922a, 1922b, 1930). Given, then, the importance of drive-reduction learning theory at that time, with its implicit view of man as egoistic and pleasure-serving, psychologists' interests in controlling negative behaviors, like anxiety and aggression, rather than encouraging positive ones, like love and sympathy, are not hard to understand.

But the philosophical roots of American learning theory may be a necessary albeit insufficient reason for the emergence of studies of negative forms of behavior at this time. There was another more urgent, and more specific reason. American was preparing for, entering, and recovering from World War II. If the Great Depression was the cynosure of the preceding period, World War II was the focus of the socioeconomic forces for the years 1940-1960. During this period, many younger psychologists entered the Armed Services and achieved high rank. Money, facilities, and subjects were readily available. The only question was what kind of research would be undertaken. And the answer is that many of the research programs were obviously geared to the war effort, and much of the work was oriented toward behavior that could be categorized as negatively oriented. It seems understandable, at least in a practical sense, that a general would be less interested in love and sympathy than in why half of the soldiers in combat failed to fire their weapons. This does

not mean that all the research done by, and for, the Armed Services was negatively oriented. Nor does it imply that problem-centered research is less important than theoretical work, if only because so many theoretically important questions arose out of this work.[8] It would be too facile, and too crude, to conclude that wartimes lead to more studies of negative behavior given certain philosophical traditions. But science had by this time become a national resource, and national priorties did redirect research toward certain kinds of behavior that the Zeitgeist made acceptable. Psychologists might have been less willing to undertake these kinds of investigations under other conditions. Why? Possibly because the proscriptions against negative forms of behavior affect psychologists' willingness to investigate them almost as much as they inhibit the average persons' to perform them. So conceivably it was not until this kind of research was sanctioned and funded that psychologists began to investigate it. (Sanford, 1976)

This brings us, then, to the most recent period. Figure 1 makes it clear that negative studies still predominated, but that there was a disproportionate increase in studies of positive social behavior--an increase not explainable by the information explosion. Obviously, much of what appeared in the 1970 and 1972 Abstracts was begun several years before, so it is to the decade of the 60's that we must turn our attention. It is difficult to analyze scientific trends still in progress. And much has already been written about the 1960's. Our concern, however, is specifically with whatever impact the social upheavals of that period might have had upon psychological research.

In the 60's psychologists were involved in teach-in's opposing the war in Vietnam, in disarmament research, in consideration of alternative life styles, in nonverbal forms of psychotherapy, etc. The list could be considerably extended. All of this is probably best epitomized for psychology in the rhetoric of "relevance." Relevance may be a term that

has become greasy with too much handling, but the term is still with us, and it may as well serve as the label for the impact of the 60's upon psychology.

It is hard to say exactly when the chant for relevance began, but sometime after World War II and Korea, having sacrificed for freedom and decency abroad, Americans wanted a little of it at home. Questions arose about drug and alcohol addiction, about life in the ghetto, crime, aging, and other social problems. What were the facts? How should they be treated? And whose responsibility was it? In some instances the media played a crucial role in focusing public opinion, as in the Kitty Genovese case (Rosenthal, 1964). Although public indignation and psychologists' attention to the relatively isolated, but by no means unique Genovese case remains a mystery, Kitty Genovese is probably cited more often in this literature than the most productive researcher. And the case may have provided the impetus and strategy for subsequent intervention research. The important facts are that funds were available, and psychologists responded to the pressure for relevance with more positive, constructive ideas. How can we explain this?

Two important movements were afoot within psychology to facilitate more positively oriented research. In the first place, there was the happy confluence of the works by Gouldner (1960), Berkowitz (1963), Campbell (1965), Latané - Darley (1970), and Rubin (1973). They raised new and interesting questions about positive forms of behavior; for example, about the genetics of altruism and nonrewarded behavior. And the research possibilities challenged the imagination of psychologists. The names in the game began to change. While studies of "cooperation," "competition," and "sympathy" had been around for a long time, there were now studies of "aiding," "altruism," "attraction," "bystander intervention," "friendship," "helping," "social responsibility," and even "passionate love." In the past the appearance of words like these in the title of an article would have

led to the automatic expulsion of the author from the research community. But during this period this kind of work was being rewarded; for example, the AAAS prizes to Latané and Darley in 1968 and Zick Rubin in 1969.

In the second place, there was some indication that the pressures for relevance fell felicitously upon the wintertime of psychology's discontent. A spate of articles began to appear about this time critical of both substance and method (Elms, 1975; Gergen, 1973; Greenwald, 1975; McGuire, 1973; Schlenker, 1974; Ring, 1967). These were not articles by marginal men in obscurantist collections, but were written by some of the most productive and respected researchers and appeared in the best of the journals. If the leaders write about the dubiousness of the battles, what effect does this have upon the foot soldiers? One effect may certainly be to loosen the committment to traditional methods and research orientations. Thus with the old patterns under attack and exciting new possibilities presenting themselves, many psychologists began investigating "positive" kinds of behavior.

In summary, then, our results suggest that there is in progress in psychology a moderate but significant change in emphasis from studies investigating behavior which can be defined as negative to behavior which can be called positive. More seems to be involved than new terms by which to designate the dependent variables. Whether the return to more positively oriented studies indicates an increased social concern, a broadening and deepening interest in human behavior, a need for newer concepts and methods, an extension of psychological theory, or some combination of all of these, remains to be seen. Perhaps the increase in studies of positive forms of behavior since about 1970 is only a modish response of the moment; or perhaps it is a genuine rebalancing of psychological research and theory.

In addition, it is possible to suggest some interesting relationships between certain socioeconomic factors and changes along the positive-negative dimension in psychological

research. Indeed, the main purpose of this study was to demonstrate how scientific work is influenced by the social system within which it occurs.[9] It is surely not possible to indicate specific causal relationships between science and society. Society proves to be a fluid medium, and scientific research, a relatively sluggish dependent variable. World War II, for example, was probably a factor in the emphasis upon studies of negatively oriented behavior, but, as Figure 1 shows, these kinds of studies did not decrease with the end of hostilities. More must be involved than socioeconomic factors, for one is faced with the fact that studies of negative forms of behavior have continued to increase throughout the era that was supposed to be making love not war! Perhaps a research tradition, or pardigm, continues until it is perforce supplanted by another? Or perhaps it spends itself at that point when even apparent progress is no longer discernable? At any rate, the relationships between science and society seem to be interesting and important, but, at best, only necessary rather than sufficient explanations are possible herein. The present analysis suggests certain relationships that later research must find wanting or confirm.

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Footnotes

[2]Two other categories were also used; sex of investigator and single versus multiple authorship. There were no significant differences in these categories, and they are not reported further.

[3]A few titles involved a positive or negative key word and its opposite (there were several studies, for example, of "competition and cooperation"). Where a close reading of the article, itself, could not resolve the dilemma, these studies were tallied under both the appropriate key word and the closest synonym for its opposite.

[4]See Garner (1972) for a similar distinction.

[5]A number of abstracts, articles, and books were eliminated, because, for various reasons, they could not be analyzed. A Chi-square analysis using the content categories described above suggested that there were no systematic biases involved.

[6]All p-values are for a two-tailed test.

[7]I am indebted to Goodwin Watson for this information.

[8]For example, the failure-to-fire sympton was traced to childhood socialization against killing, the indoctrination program opened the whole area of attitude change, and the attempts to find a fair demobilization system produced excellent work in scaling techniques.

[9]None of the conclusions nor significance tests would have been altered by excluding the German and French publications, since they were a very small proportion of the total.

TABLE 1

Means and Standard Deviations of Positive and Negative Key Words and Percent of Studies Coded by Each Word

Positive Key Words	Mean	SD	% of Positive (N=785)	Negative Key Words	Mean	SD	% of Negative (N=2568)
Affection	7.84	1.37	2.55	Aggression	3.45	2.05	24.65
Affiliation	6.23	1.31	5.86	Alienation	3.03	1.84	3.78
Altruism	6.94	1.65	6.11	Antipathy	3.45	1.41	.08
Attraction	6.26	1.41	13.76	Antisocial	2.45	1.27	1.25
Cooperation	7.45	1.34	19.24	Anxiety	3.39	1.34	37.11
Empathy	7.61	1.54	15.03	Authoritarianism	2.97	1.62	8.18
Friendship	7.74	.92	7.77	Cheating	1.81	1.28	.78
Generosity	7.23	1.77	.25	Deception	2.45	1.34	.66
Help	7.71	1.37	9.81	Dogmatism	2.39	1.10	3.78

TABLE 1--(Continued)

Positive Key Words	Mean	SD	% of Positive (N=785)	Negative Key Words	Mean	SD	% of Negative (N=2568)
Honesty	7.61	1.83	1.91	Egocentism	2.90	1.99	.51
Humanitarianism	7.71	1.65	.51	Hostility	2.42	1.88	5.10
Liking	7.00	1.44	6.24	Intolerance	2.45	1.70	.16
Sharing	7.52	1.56	.76	Isolation	3.29	2.25	6.23
Sympathy	7.32	1.23	1.66	Jealousy	2.61	1.43	.66
Tenderness	7.23	1.43	.51	Lying	3.29	1.62	1.44
Tolerance	7.64	1.64	2.04	Narcissism	3.23	1.70	1.01
Trust	8.00	.88	5.10	Prejudice	2.10	1.71	4.21
Truth	7.71	1.22	.89	Stealing	1.74	1.29	.43
			100.00				100.02

TABLE 2

Number and Proportion of Positive and Negative Studies by Decades

Decade	Positive Social Behavior		Negative Social Behavior		Totals	
	N	Proportion[a]	N	Proportion[a]	N	Proportion[b]
1900	5	.55	4	.44	9	.0027
1910	6	.75	2	.25	8	.0024
1920	2	.20	8	.80	10	.0030
1930	14	.25	43	.75	57	.0170
1940	22	.27	59	.73	81	.0242
1950	25	.18	123	.83	148	.0441
1960	76	.16	385	.84	461	.1375
1970	177	.19	745	.81	922	.2750
1972	458	.28	1199	.72	1657	.4942
Totals	785	.2341	2568	.7659	3353	1.00

[a]Proportion of decade.

[b]Proportion of total.

TABLE 3

Subjects Used in Positive and Negative Studies by Decades

Decade	Positive Social Behavior			Negative Social Behavior		
	Animals	Adults	Children	Animals	Adults	Children
1900-1920	0	0	3	0	1	0
1930	0	5	5	0	14	5
1940	3	8	6	0	14	9
1950	0	7	3	2	41	19
1960	3	36	12	25	191	53
1970	1	101	34	100	351	110
1972	8	273	40	159	616	114
Totals	15	430	103	286	1228	310

Note--Because this categorization was not applicable to all studies, this total is less than total number of studies analyzed.

TABLE 4

Methodological Orientations of Positive and Negative Studies by Decades

Decade	Positive Social Behavior				Negative Social Behavior			
	Experimental	Descriptive	Theory	Therapy	Experimental	Descriptive	Theory	Therapy
1900-1920	2	0	4	0	0	0	1	0
1930	6	1	4	1	6	6	17	7
1940	11	4	6	0	10	4	12	25
1950	8	0	14	3	21	7	44	36
1960	53	1	7	4	217	7	44	70
1970	131	0	13	8	389	3	48	190
1972	272	9	19	36	600	50	118	200
Totals	483	15	67	52	1243	77	284	528

Note--Total is less than total number of studies analyzed, because not all studies could be categorized by methodological orientation.

Figure Caption

Figure 1

Studies of positively and negatively marked social behavior

by decade 1900-1972